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Dated: December 19, 2002

Signature: *Ronnie Webb*

(Ronnie Webb)

Docket No.: HO-P02108US0  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Re Patent Application of:  
Vladimir Didenko, et al.

Application No.: 10/068,065

Group Art Unit: N/A

Filed: February 6, 2002

Examiner: Not Yet Assigned

For: VACCINIA TOPOISOMERASE I-BASED  
ASSAY FOR DETECTION OF SPECIFIC  
DNA BREAKS

**INFORMATION DISCLOSURE STATEMENT (IDS)**

Commissioner for Patents  
Washington, DC 20231

Dear Sir:

Pursuant to 37 CFR 1.56, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is filed before the mailing date of a first Office Action on the merits as far as is known to the undersigned.

A copy of each reference on PTO/SB/08 is attached.

While the information and references disclosed in this Information Disclosure Statement may be "material" pursuant to 37 CFR 1.56, it is not intended to constitute an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

In accordance with 37 CFR 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. It is submitted that the Information

Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed references.

The Commissioner is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 06-2375, under Order No. HO-P02108US0.

Dated: December 19, 2002

Respectfully submitted,



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PTO/SB/08A (10-01)

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<b>Substitute for form 1449A/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete if Known</b>	
				<b>Application Number</b>	10/068,065
				<b>Filing Date</b>	February 6, 2002
				<b>First Named Inventor</b>	Vladimir Didenko
				<b>Art Unit</b>	N/A
				<b>Examiner Name</b>	Not Yet Assigned
<b>Sheet</b>	1	<b>of</b>	3	<b>Attorney Docket Number</b>	HO-P02108US0

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	AA	5,296,375-	03-22-1994	Kricka et al.	
	AB	5,304,487-	04-19-1994	Wilding et al.	
	AC	5,856,174-	01-05-1999	Lipshutz et al.	
	AD	5,904,824-	05-18-1999	Oh	
	AE	6,013,438-	01-11-2000	Didenko et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
	BA	IB-94/05414-A1 (1)	03/17/1994	The Regents of the University of California		
	BB	IB-98/23777-A2 (2)	06/04/1998	Baylor College of Medicine		
	BC	IB-98/23777-A2 (3)	06/04/1998	Baylor College of Medicine		

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<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See attached Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the application number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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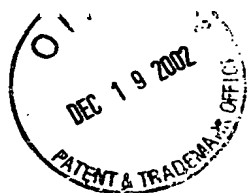
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<b>Sheet</b>	2	<b>of</b>	3	<b>Attorney Docket Number</b>	HO-P02108US0

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	CA ①	Bantel, Heike, et al.; Detection of Elevated caspase activation and early apoptosis in liver diseases; European Journal of Cell Biology, Vol. 80, pp. 230 - 239, March 2001	✓
	CB ②	Barry, Michael A., et al.; Identification of Deoxyribonuclease II as an Endonuclease Involved in Apoptosis; Archives of Biochemistry and Biophysics, Vol. 300 91), pp. 440 - 450, January, 1993	✓
	CC ③	Bernardi, Giorgio; Spleen Acid Deoxyribonuclease; In The Enzymes (ed Boyer, P.D.) v. 4, pp 271 - 287 (Academic Press, New York: 1971)	✓
	CD ④	Byassee, Tyler A., et al.; Probing Single Molecules in Single Living Cells; Anal. Chem. 2000, 72, pp 5606 - 5611	✓
	CE ⑤	Darzynkiewicz, Z., et al.; Review Article - Features of Apoptotic Cells Measured by Flow Cytometry; Cytometry 13:795 - 808 (1992)	✓
	CF 6	Didenko, Vladimir V., et al.; Presence of Double-strand Breaks with Single-base 3' Overhangs in Cells Undergoing Apoptosis by Not Necrosis; The Journal of Cell Biology, Vol. 135 95), pp 1369 - 1376, December 1996	✓
	CG 7	Didenko, Vladimir V., et al.; Benchmarks - Substantial Background Reduction in Ligase-Based Apoptosis Detection Using Newly Designed Hairpin Oligonucleotide Probes; BioTechniques 27:1130 - 1132 (December 1999)	✓
	CH 8	Didenko, Vladimir V., et al.; Technical Advance - Biotin-Labeled Hairpin Oligonucleotides; American Journal of Pathology, Vol. 152 (4), pp 897 - 902, April 1998	✓
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	CK 11	Nikonova, Larisa V., et al.; Properties of some nuclear nucleases of rat thymocytes and their changes in radiation-induced apoptosis; Eur. J. Biochem. 215, pp. 893 - 901 (1993)	✓
	CL 12	Perez-Sala, Dolores, et al.; Intracellular Alkalinization Suppresses Lovastatin-induced Apoptosis in HL-60 Cells through the Inactivation of a pH-dependent Endonuclease; The Journal of Biological Chemistry, Vol. 270 (11), pp. 6235 - 6242, March 17, 1995	✓
	CM 13	Saraste, Antti; Morphologic Criteria and Detection of Apoptosis; Herz, Vol 24, pp 189 - 195 (Nr.3), 1999	✓
	CN 14	Shiokawa, Daisuke, et al.; Identification of an endonuclease responsible for apoptosis in rat thymocytes; Eur. J. Biochem., Vol. 226, pp 23 - 30, 1994	✓
	CO 15	Shuman, Stewart, et al.; Characterization of Vaccinia Virus DNA Topoisomerase I Expressed in Escherichia coli; The Journal of biological Chemistry, Vol. 263 (31), pp 16401 - 16407, November 5, 1988	✓
	CP 16	Shuman, Stewart; Site-specific DNA Cleavage by Vaccinia Virus DNA Topoisomerase I - Role of Nucleotide Sequence and DNA Secondary Structure; The Journal of Biological Chemistry, Vol. 266 (3), pp 1796 - 1803, January 25, 1991	✓
	CQ 17	Shuman, Stewart; Communication - Two Classes of DNA End-joining Reactions Catalyzed by Vaccinia Topoisomerase I; The Journal of Biological Chemistry, Vol. 267 (24) pp 16755 - 16758, August 25, 1992	✓
	CR 18	Shuman, Stewart; Novel Approach to Molecular Cloning and Polynucleotide Synthesis Using Vaccinia DNA Topoisomerase; The Journal of Biological Chemistry, Vol. 269 (51) pp 32678 -	

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Sheet	3	of	3	Attorney Docket Number	HO-P02108US0

		32684, December 23, 1994	
	CS 2	Sikorska, Marianna, et al.; Endonuclease Activities and Apoptosis; Chapter 7, When Cells Die, pp 211 - 242, (ed R. A. Lockshin, Z. Zakeri, and J. L. Tilly), Wiley-Liss, Inc., New York, 1998,	
	CT 2	Staley, Kristina, et al.; Apoptotic DNA fragmentation is detected by a semi-quantitative ligation-mediated PCR of blunt DNA ends; Cell Death and Differentiation (1997) 4, 66 - 75	
	CU 2	Walker, P. Roy, et al.; Neither Caspase-3 nor DNA Fragmentation Factor Is Required for High Molecular Weight DNA Degradation in Apoptosis; Annals New York Academy of Sciences, 887:48 - 59 (1999)	
	CV 2	Widlak, Piotr, et al.; Cleavage Preferences of the Apoptotic Endonuclease DFF40 (Caspase-activated DNase or Nuclease) on Naked DNA and Chromatin Substrates; The Journal of Biological Chemistry, Vol. 275 (11), pp 8226 - 8232, March 17, 2000	
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	CY 2	Sikder, Devanjan, et al.; Determination of the recognition sequence of <i>Mycobacterium smegmatis</i> topoisomerase I on mycobacterial genomic sequences; Nucleic Acids Research, Vol. 28 (8), 1830 - 1837, 2000	
	CZ 2	Hwang, Young, et al.; DNA Contacts Stimulate Catalysis by a Poxvirus Topoisomerase; The Journal of Biological Chemistry, Vol. 274 (14), pp 9160 - 9168, April 2, 1999	
	CA1 2	Cheng, Chonghui, et al.; A Catalytic Domain of Eukaryotic DNA Topoisomerase I; The Journal of Biological Chemistry, Vol. 273 (19), pp 11589 - 11595, May 8, 1998	
	CB1 2	Sekiguchi, JoAnn, et al.; Covalent DNA Binding by Vaccinia Topoisomerase Results in Unpairing of the Thymine Base 5' of the Scissile Bond; The Journal of Biological Chemistry, Vol. 271 (32), pp 19436 - 19442, August 9, 1996	
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	CD1 2	Sekiguchi, JoAnn, et al.; Kinetic Analysis of DNA and RNA Strand Transfer Reactions Catalyzed by Vaccinia Topoisomerase; The Journal of Biological Chemistry, Vol. 272 (25), pp 15721 - 15728, June 20, 1997	

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